



# Solutions for Material Handling





## Material Handling

Material handling is the process of handling finished goods throughout the entire cycle from finished product to distribution. This involves various types of movement, including intermodal shipping, warehouse operations, conveyance, storage and distribution center operations. Other material handling operations include baggage handling, vehicle control and post-primary packaging operations.

Banner Engineering is well versed on the intricacies of the material handling industry and offers solutions to help increase manufacturing efficiencies by reducing downtime and overall manufacturing costs. Banner's vast offering, including sensor, vision, safety, wireless and lighting products, suits needs for material handling applications ranging from packaging to shipping. With a history of high performance, Banner provides quality products with lasting performance.



## Measurement & Inspection

High-quality optical, ultrasonic, radar and measuring array sensors help to solve the most challenging measurement applications.



## Vision

Banner's extensive line of vision sensors ensure accurate barcode reads, as well as provide a reliable solution for sortation system item detection. Banner offers standard and high-resolution gray scale, color, single and multipurpose vision sensors, as well as 1D and 2D barcode read capability.





## Lighting & Indication



Banner offers a wide variety of lighting and indicator solutions, including LED lighting, signal tower lights, indicators, touch buttons and pick-to-light indicators. With flexible designs, high-quality and energy-efficient LED products, Banner's lighting and indication selection offers a unique solution that suits many environmental, workplace efficiency and mounting needs.



## Machine Safety



Banner produces a wide range of safety-related products, including safety light screens, safety interlock switches, E-stop modules and two-hand control safety modules that protect personnel and equipment.



## Wireless



Banner Engineering's SureCross wire replacement products are designed for easy use. The most basic network includes a Gateway and one Node. Many of these models include pre-defined I/O mapping between two devices.

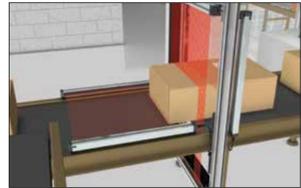


## Sensors

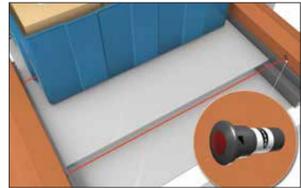


Banner supplies sensors to virtually all of the Top 20 Material Handling companies, offering the most complete line of photoelectric sensors - over 12,000.

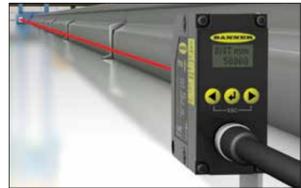
# Material Handling Solutions



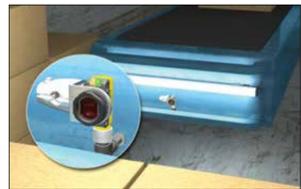
**5 Carton Dimensioning**  
EZ-ARRAYs are set up both vertically and horizontally to measure the length, height and width of cartons to maximize throughput and ensure proper placement into the storage system.



**7 Shuttle Tote Positioning**  
SB12 opposed-mode positioning sensors ensure totes are aligned properly when pushed onto shuttles so they can be transported and stored without damage.

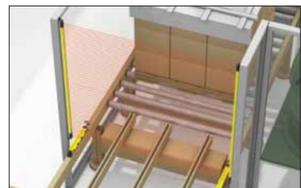


**8 Stacker Crane Positioning**  
LT7 laser sensors ensure proper alignment of the stacker crane when placing product into the storage areas, eliminating equipment and product damage.



**1 Extendable Conveyor**  
For a smooth process, background suppression QS18FF sensors ensure the extendable conveyor does not extend too far into the truck and crush boxes. A WLB32 LED light helps illuminate the area being unloaded.

## Receiving



**4 Depalletizer Guarding with Muting**  
EZ-SCREEN LP safety light curtains with muting guard around the depalletizer protect workers from a robot and allow pallets to move freely into the work zone, minimizing equipment shutdown due to light curtain breach.

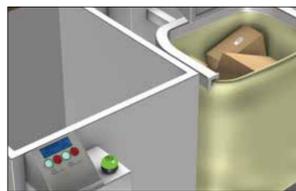


**3 Collision Avoidance**  
DS18 sensors provide zone control input to help with box collisions and ensuring a smooth flow of items.



**6 Tracking of Received Goods**  
The TONM linear barcode scanner quickly detects 1D barcodes on each carton, communicating to the warehouse management system for accurate tracking of received goods.

## Storage



**13 Full Tote Indication and Verification**  
Operators touch ergonomic K50 touch buttons to acknowledge a tote is full in the small package sorter area.



**14 Wireless Forklift Signaling**  
A Q45 wireless node communicates to a wireless DX80, signaling that forklift drivers can remove the completed pallet for shipping.

## Shipping



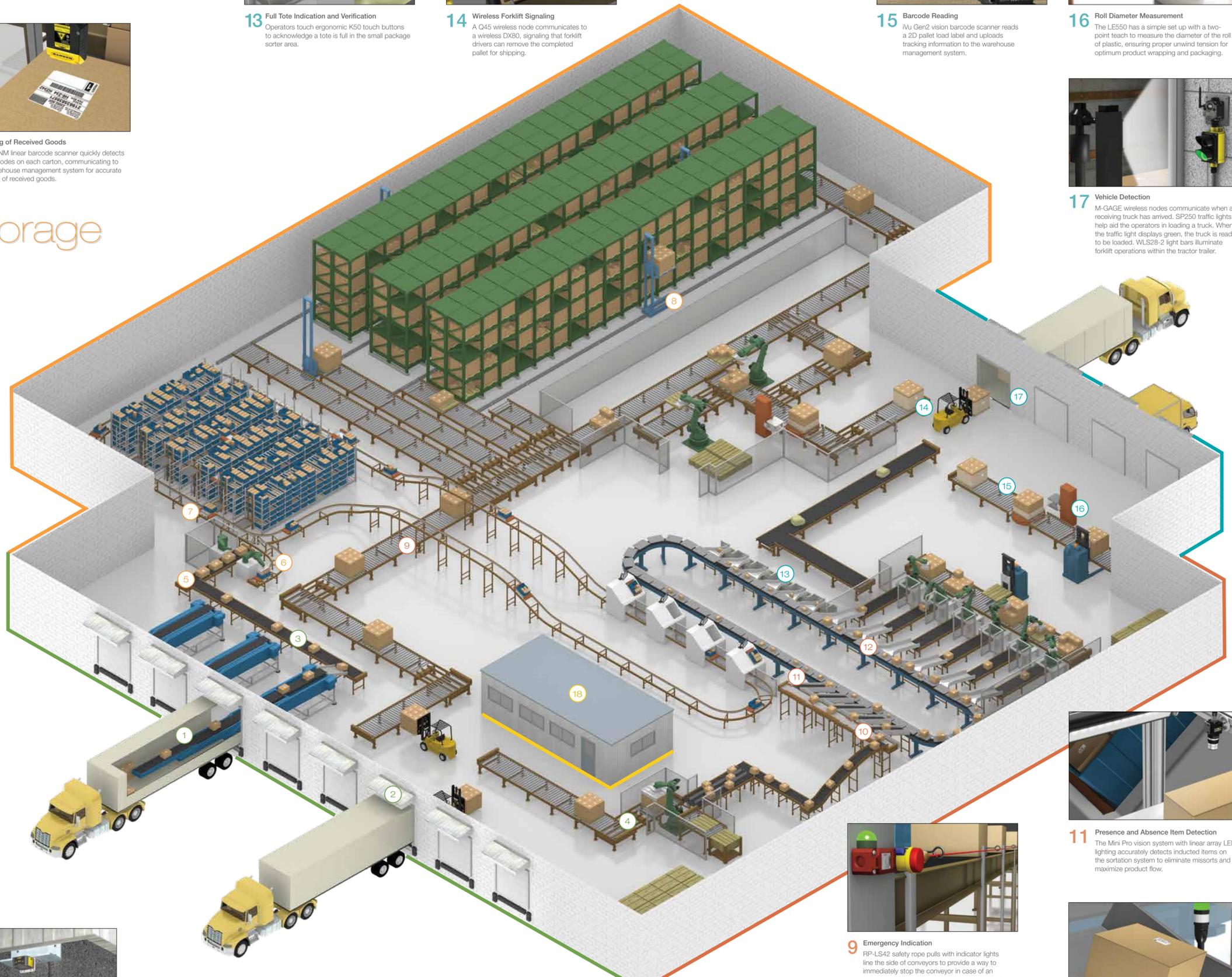
**15 Barcode Reading**  
Mu Gen2 vision barcode scanner reads a 2D pallet load label and uploads tracking information to the warehouse management system.



**16 Roll Diameter Measurement**  
The LE550 has a simple set up with a two-point touch to measure the diameter of the roll of plastic, ensuring proper unwind tension for optimum product wrapping and packaging.



**17 Vehicle Detection**  
M-GAGE wireless nodes communicate when a receiving truck has arrived. SP250 traffic lights help aid the operators in loading a truck. When the traffic light displays green, the truck is ready to be loaded. WLS28-2 light bars illuminate forklift operations within the tractor trailer.



## Facilities Operations



**2 Vehicle Presence and Absence**  
The QT50R radar sensor is on the outside of the building for vehicle presence and absence. Detecting vehicles as they arrive helps create a more efficient receiving process and reduces a potential hazard area by ensuring doors remain closed when vehicles are not present. Radar sensors are ideal for outdoor conditions because sensing functions are unaffected by wind, rain, snow, fog, humidity, air temperature or light.



**18 Facility Function Monitoring**  
The control room contains wireless gateways, which receive information from multiple wireless nodes to help with dock door notification, pallet pick up requirements and facility function monitoring, including humidity/temp control.



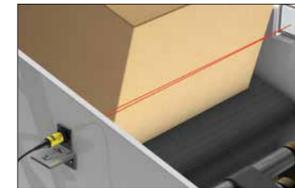
**11 Presence and Absence Item Detection**  
The Mini Pro vision system with linear array LED lighting accurately detects inducted items on the sortation system to eliminate missorts and maximize product flow.



**12 Exit Chute Jam Indication**  
TL50 tower lights provide jam indication, lighting red when packages are not moving freely through the chute.



**9 Emergency Indication**  
RP-LS42 safety rope pulls with indicator lights line the side of conveyors to provide a way to immediately stop the conveyor in case of an emergency. K30 indicators light red to show which rope pull was activated, and remain green when operational.



**10 Sortation Auto-Induction Station**  
Retroreflective S18-2 sensors are utilized at auto-induct stations to ensure proper release of product onto the sortation system.

## Sortation

Sensors



Vision



Lighting & Illumination



Wireless



Machine Safety



## Who is Banner?

Every 3.5 seconds, a Banner sensor is installed somewhere in the world. Banner solves problems for most of the manufacturing companies in the Fortune 500, who rely on Banner for reliable automation solutions.

Banner products help manufacture the cars you drive, the TVs you watch, the food you eat, the medicine you take and virtually every product you consume. Whatever the industry, Banner has a solution to help you automate your plants, improve efficiency and manufacture quality products.

### Manufacturing Specialists

Banner is a leading source for manufacturing needs with an extensive product line. With over 30,000 products, including our award-winning sensors, wireless solutions, vision sensors and lighting, machine safety, indicator lights and LED lighting, we have a solution for you.

### Application Solution Experts

Our field sales engineers are the most highly-trained and experienced professionals in the industry. They can rapidly analyze an application to help you find the best solution.

### Global Presence

We are a global company with a focus on our commitment to customers around the world. Banner has worldwide support with a network of 3,000 professionals who are ready to help you in your plant no matter where you are located.

### Banner Specials

Banner's growing product lines include thousands of standard products. However, if you have an application requiring a unique solution, contact one of Banner's Application Engineers and learn about our rapid customization and ability to deliver special product variations.



Talk with an app engineer. Get product specs. Order now.

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